

REMARKS

This Amendment addresses the issues raised by the Examiner in the “Final” Office Action mailed June 29, 2005. Initially, Applicants would like to thank the Examiner for the careful consideration given this case. In view of the above amendments and the following remarks, Applicants feel that all outstanding issues have been addressed and prompt allowance of all remaining claims is respectfully requested.

Finality of Office Action

The Office Action dated June 29, 2005 was labeled as a “Final” Office Action, however, the finality of this Office Action is improper given the proceedings in this case. In response to the Examiner’s initial Office Action dated February 8, 2005, applicants merely clarified the scope of the claims as filed by emphasizing the “onboard power supply” that is used to power the work tool used within the lateral device. This is not a new claim limitation; it was taken from original Claim 17 – a claim that was already examined in this case. Moreover, this concept was carried into new Claims 23-31 as the device is described as performing “untethered” work. This ministerial amendment did not require a new search as it did not change the scope of the filed claims. Therefore, the Examiner’s use of completely new prior art (in place of the previous Endoh, Warren and Driver patents) was not necessitated by any amendment, and the present Office Action should be non-final. It is respectfully requested that the finality of the present Office Action be withdrawn and a new Office Action be properly submitted.

Claim Rejections § 103(a)

Applicants having overcome each and every one of the Examiner’s previous §102 rejections, the Examiner has now rejected Claims 1, 9-16, 18 and 23-31 under 35 U.S.C. §103(a) as being unpatentable over U. S. Patent No. 6,887,014 to

Holland (“Holland”) in view of U.S. Publication No. 2004/0055746 to Ross et al. (“Ross”). However Holland is merely a traditional tethered robot and Ross has no bearing on the type of robot utilized in the present invention. Neither of these references, alone or in combination, fairly teaches or suggests the present invention.

The Examiner’s main reference, Holland, does not even approach the present invention. Holland is merely a tethered (using a power and control umbilical cord) robot that can be inserted into a network of pipes. Specifically, it is a tethered and remotely controlled robot that is used to insert small sections of conduit within a network of pipes and to tape that conduit in place. In the Abstract, Holland states that the robot’s “tools” may include “a transport housing for a second remotely-controlled robotic vehicle, or mouse which can be deployed for traversing and treating sub-conduits.” Holland at Abstract.

Even a cursory review of Holland shows that in every embodiment, it fails to address the present invention. First, Holland is a tethered robot (*see* Fig. 7) that performs work that is guided from the surface using power that is supplied from the surface. It does not perform “untethered work” (Claims 1 and 23-31). It does not include an “onboard power supply” which provides the power to perform work within a lateral (Claims 1, 9-16, 18, and 23-31). Since it is always tethered to the surface, no lateral device robot is “loaded” or “unloaded” into a lateral (Claim 1). Additionally, Holland does not teach or suggest any of the claimed specialty work tools [e.g., rotary bit cutting tool (Claims 10, 24); spring-biased rotary cutting tool (Claims 11, 14, 25, 28); hole saw (Claims 12, 26); grinding device (Claims 13, 27); and an electromagnetic signal source (Claims 15, 29)]. Moreover, the tethered device of Holland includes no on-board “local” decision-making (Claims 18, 31) as all control is from the surface through the tether. In short, Holland is an entirely different class of robot than the presently-claimed invention.

To fill in the gaps in Holland, the Examiner points to Ross. However, Ross is merely a well completion robot that may be run with a rechargeable battery.

The Ross robot travels down a single well conduit. It has no ability to perform work within a lateral that adjoins a main conduit. It does not have any type of anchoring device to secure itself within a lateral to perform work. It does not have a plurality of work tools that are used to grind, cut, punch and re-line lateral pipes (which would be counter-intuitive to a well robot) as claimed in the present invention. Moreover, it is not “loaded” and “unloaded” into a lateral pipe that intersects a main pipe – it is always parked within a single axis pipe (no laterals exist in wells).

Specifically, the Ross robot “is permanently disposed within the interior of the well-completion.” Ross at [0035]. Moreover, the Ross robot is only capable of moving longitudinally (back and forth) within a single axis tubular structure. Ross at [0035]. It is not for use in multi-pipe networks with main lines and laterals (see Claim 1). It cannot be “loaded” or “unloaded” into/from a lateral. It does not have an “anchor device” that secures the robot within a lateral. Simply put, Ross is just a robot with a rechargeable battery. It bears no other relationship to the present invention, to Holland, or to the general class of robots that can perform remote work within a lateral pipe without the use of a tether.

Moreover, the type of work tools that are contained within the lateral device and the type of work that is performed by the device as presently claimed are not taught or suggested by Ross (or Holland). Ross contains only sensors that sense various characteristics of a well. Ross at [0038]-[0039]. It does not contain the grinding, cutting, and sawing tools that perform physical work on a lateral lining or lateral pipe. Clearly, as presently claimed and as taught in the specification of the present invention, the tools and power required to perform this work are not present in Ross.

Finally, Claims 18 and 31 are directed to the determination of work tool state based upon “local decision-making from on board the lateral device.” Clearly, Holland has no decision-making ability at all. Moreover, the Ross robot works hand-in-hand with a recharging station that is integral with the well. As

explained throughout Ross, the robot merely performs a single task, and then moves back to the charging station to be “reprogrammed.” One skilled in the robotic arts understands that this sort of single use reprogramming is a far cry from the “autonomous” nature of a true untethered robot. The decisions of the Ross robot are made at the surface – by the operator – whereas the claimed lateral device robot of Claims 18 and 31 performs decision-making right on the lateral device. This is a truly autonomous robot and is not even touched upon by Holland or Ross.

The Examiner’s §103 Combination

Additionally, the Examiner has not set forth a proper prima facie case for combining the teachings of Holland and Ross together. It is the Examiner’s burden to show a teaching or suggestion to make the combination from within the four corners of the asserted references. In addition to the fact that any combination of these references would not render obvious the present claims (as discussed above), no such combination can be made for two such disparate fields of endeavor. Clearly, a one-dimensional robot that is permanently parked in a well for pumping operations (for example) has no bearing on Holland’s tethered, multi-function robot to perform work. This combination is therefore improper, and the Examiner has not met his burden of setting forth a proper §103 combination.


Finally, the Examiner’s asserted §103 combination only involves putting a rechargeable battery (from Ross) into the Holland robot. Even if this combination were proper (which it is not), the Holland robot still fails to render obvious the present claims for all of the reasons set forth above with respect to Holland. Clearly, Holland is prior art of the type that is specifically discussed in the Background of the Invention in the present application, and it is easily overcome by the present claims. See [10] and [11].

The above claim amendments and accompanying remarks address each and every concern raised by the Examiner in the Office Action. Applicants

believe that all remaining claims of the present invention are now in condition for final allowance. If the Examiner feels that any issues remain outstanding, the Examiner is encouraged to contact Applicant's attorney at the contact information below.

Respectfully submitted,

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